

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

Microsoft Licensing GP,

Plaintiff,

-against-

Yulong Computer Telecommunication
Scientific (Shenzhen) Co., Ltd.,

Defendant.

No. 1:15-cv-05014-KBF

DECLARATION OF EXPERT NIKOLAUS BAER

I. Introduction

1. I have been retained by Orrick, Herrington, & Sutcliffe LLP in connection with the matter of *Microsoft Licensing GP v. Yulong Computer Telecommunications Scientific (Shenzhen) Co., Ltd.*, No. 1:15-cv-05014-KBF. I have been asked to identify whether one can determine if a Yulong device includes an implementation of the Microsoft Exchange ActiveSync protocol (“Exchange ActiveSync”) by inspecting the device and software on it. Several devices from Yulong, discussed below, use the Android mobile operating system (“Android”), which typically includes an implementation of Exchange ActiveSync that can be readily detected from the standard Android user interface.
2. I have personal knowledge of the facts set forth in this Declaration and, if called to testify as a witness, could and would competently testify to them under oath.

II. Experience

3. I am a software engineer with over eight years of experience analyzing software intellectual property matters. I have a Bachelor of Science degree in Computer Engineering from the University of California, Santa Barbara. I have developed software for source code comparison, medical devices, mobile terrain database applications, web applications, mobile applications, and network emulation applications.
4. I have advised or offered opinions on over 30 software intellectual property (IP) matters, including instances of patent infringement, trade secret misappropriation, and software plagiarism. This work has included analyzing software source code, binary code, and the functionality of software on a variety of platforms, such as the Android devices. As part of working with the Android mobile operating system, I have developed applications using the Android software development kit (“SDK”), decompiled Android application

packages (“APK”), and tested techniques for gaining additional permissions (“rooting”) on Android devices. I have also authored several papers on engineering and software analysis, based upon my experience analyzing software. A copy of my resume is attached as Appendix A. A list of cases in which, during the previous four years, I’ve testified as an expert at trial or deposition, is attached as Appendix B.

III. Compensation

5. I am being compensated at my standard rate of \$350 per hour. My compensation is in no way related to my findings and conclusions.

IV. Analysis

6. As discussed below, I reviewed the steps for identifying an Exchange ActiveSync implementation within both Android devices in general and a specific Yulong device. I also reviewed the steps for identifying APK files that include implementations of Exchange ActiveSync within an Android device, such as Yulong devices. A list of materials that I have considered in forming my opinion is attached as Appendix C.

A. Exchange ActiveSync in Android

7. The Exchange ActiveSync protocol lets devices synchronize a user’s information, such as emails and calendar events, with a server. Android provides an implementation of Exchange ActiveSync, which is typically included on devices running Android, since at least version 2.2 released in May 2010 and 2.3 released in December 2010.^{1 2} Users can

¹ Blank, M (2008-2009) Android Exchange [Computer Program]. Google, Inc. Web May, 5, 2016. <<https://android.googlesource.com/platform/packages/apps/Exchange/+/master/src/com/android/exchange>>

² “Microsoft Exchange Information Services and Security Policies Supported by Android 2.2 and 2.3.” Google, Inc. Web May, 5, 2016. <<http://static.googleusercontent.com/media/www.google.com/en//help/hc/pdfs/mobile/ExchangeAndAndroid2.2and2.3-003.pdf>>

setup Exchange ActiveSync account connections by entering login information through the main device settings or email application.^{3 4} Within the Android settings menus, an Exchange ActiveSync account is often referred to as a **Microsoft Exchange ActiveSync**, **Exchange**, or even **Corporate** account.

B. Exchange ActiveSync in Yulong Coolpad Quattro Settings

8. I found that the implementation of Exchange ActiveSync on a Yulong Coolpad Quattro 4G 5860E (“Coolpad Quattro”) can be identified through the standard user interface.⁵ The Coolpad Quattro uses Android version 2.3.7, which was released in September 2011, see Figure 1 and Figure 2.⁶

³ “Setting up an Android Based Phone with ActiveSync.” The University of Queensland. Web May, 5, 2016. <<https://www.its.uq.edu.au/helpdesk/setting-android-based-phone-activesync>>

⁴ “Android Exchange Active Sync Setup” Protected Trust, LLC. Web May, 5, 2016. <<https://protectedtrust.com/knowledgebase/android-exchange-active-sync-setup/>>

⁵ I purchased the Yulong Coolpad Quattro through the Amazon marketplace.

⁶ “Google Android 2.3.7 Simplified operating system datasheet” PDADB.net. Web. 05 May 2016. <http://pdadb.net/index.php?m=os&id=a237&c=google_android_2.3.7>



Figure 1. Yulong Coolpad Quattro



Figure 2. Yulong Coolpad Quattro uses Android version 2.3.7

9. Tapping **Settings, Accounts and Sync, Add Accounts** and then selecting the option **Corporate**, brings up the **Add an Exchange account** screen, shown in Figure 3, where the users can configure settings for an email account that uses an implementation of Exchange ActiveSync. I explain below how I determined that this reference to an Exchange account in the setup screen is to an implementation of Exchange ActiveSync. This Exchange account setup screen can be readily accessed from the user interface and

demonstrates that the Coolpad Quattro includes an implementation of Exchange ActiveSync.

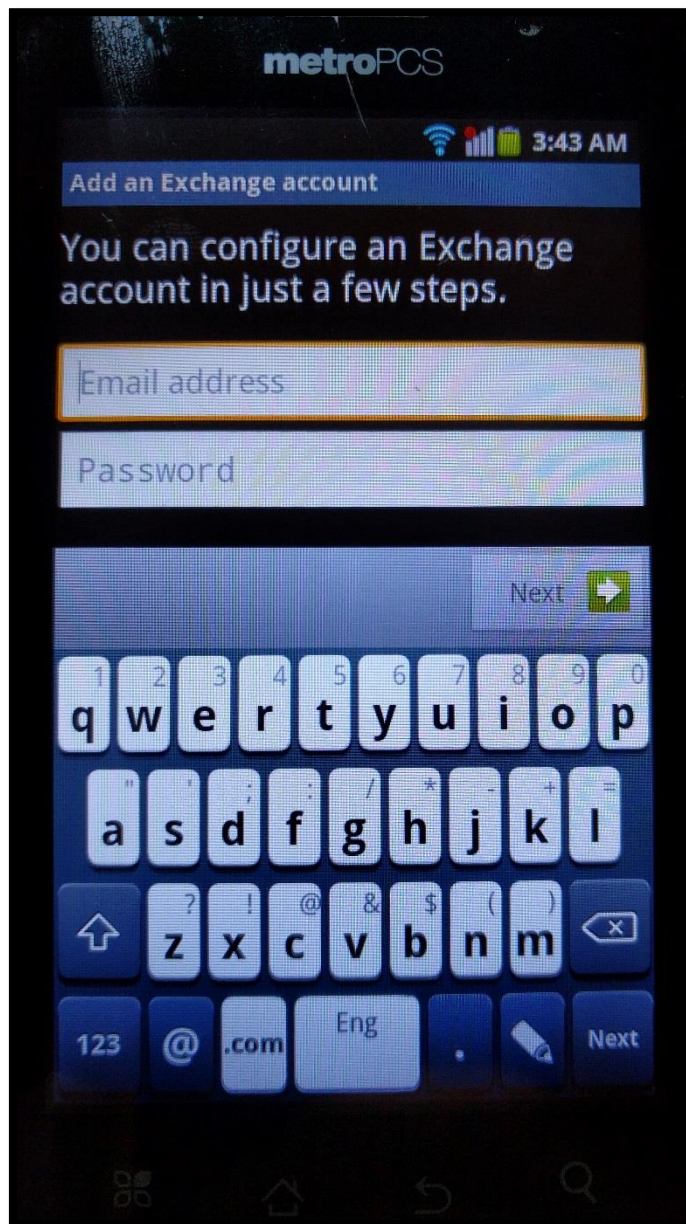


Figure 3. Exchange ActiveSync account setup screen in Coolpad Quattro

C. Exchange ActiveSync in Coolpad Quattro Filesystem

10. Software is installed on Android devices as Android application package (“APK”) files.

The APK that includes the Exchange ActiveSync implementation on the Coolpad Quattro

is named **CP_Email.apk**. This file, **CP_Email.apk**, can be located within the file system of the Coolpad Quattro from the user interface, as shown in Figure 4.⁷

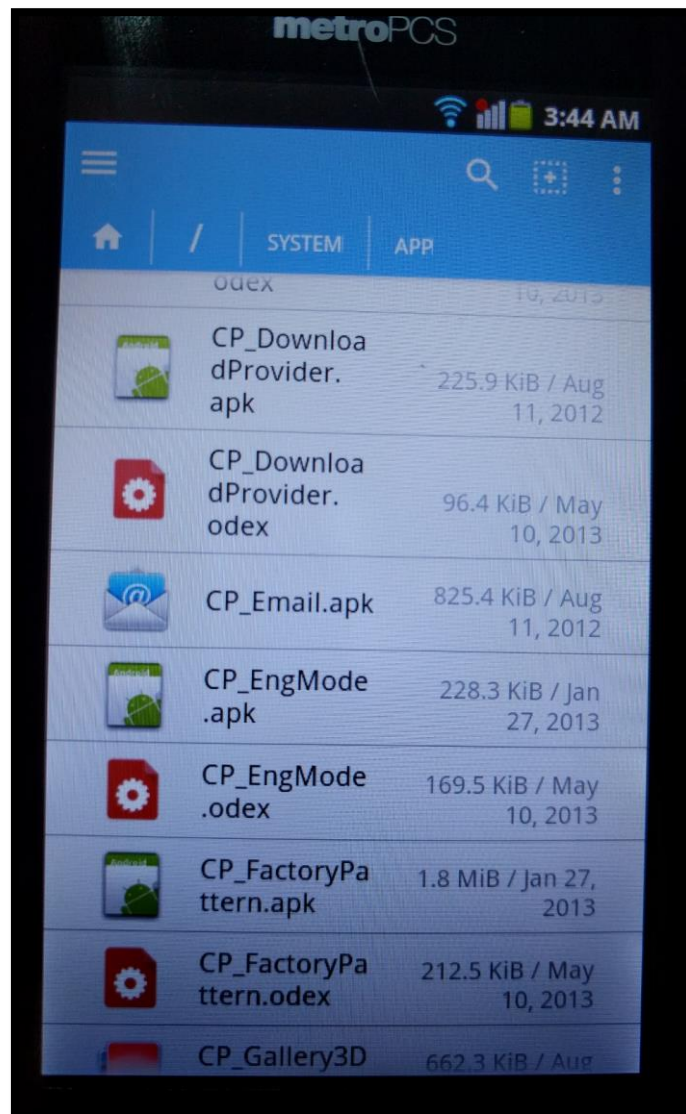


Figure 4. The file CP_Email.apk in Coolpad Quattro

11. To confirm that **CP_Email.apk** includes an Exchange ActiveSync implementation, I copied the file from the Coolpad Quattro and then decompiled the APK file to inspect its

⁷ I used the Android file system explorer application File Explorer from NextApp, Inc., which can be found at <https://play.google.com/store/apps/details?id=nextapp.fx&hl=en>, to inspect the file system of the Coolpad Quattro.

contents.⁸ Figure 5 shows a portion of the source code contents of the **CP_Email.apk** file. This portion includes files such as **Eas.java** and **strings.xml**, which correspond to the Exchange ActiveSync implementation provided by Google, Inc. as part of the Android operating system.^{9 10} The **CP_Email.apk** file also includes the file **patent_disclaimer.txt** that also corresponds to the Android Exchange ActiveSync implementation.¹¹

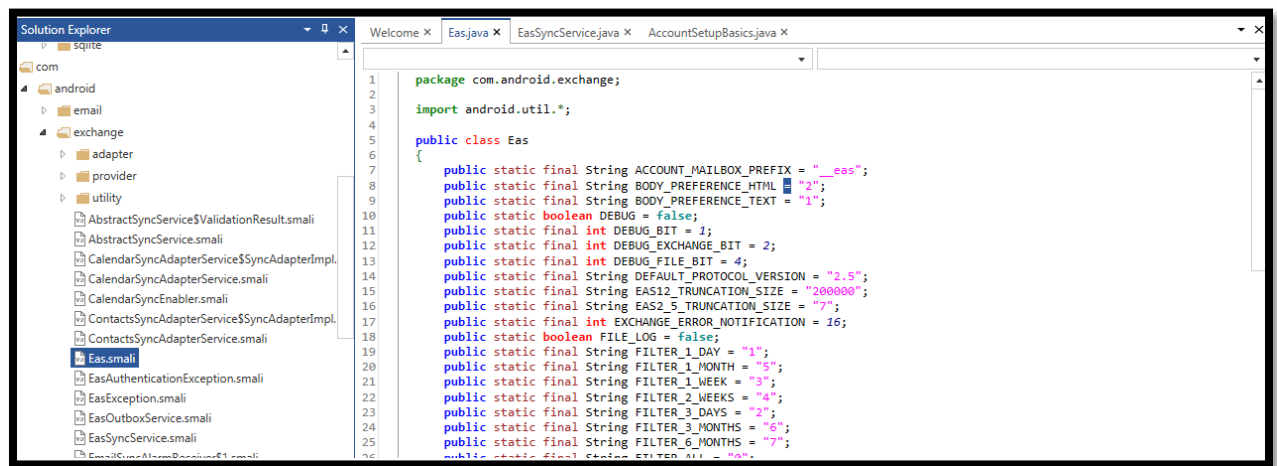


Figure 5. Exchange ActiveSync implementation within CP_Email.apk

⁸ I used the Virtuous Ten Studio (VTS) tool, which can be found at <http://virtuous-ten-studio.com/>, to decompile and inspect the contents of APK files.

⁹ Blank, M (2008-2009) Android Exchange EAS.java [Computer Program]. Google, Inc. Web May, 5, 2016. <https://android.googlesource.com/platform/packages/apps/Exchange/+/android-4.4_r1/src/com/android/exchange/Eas.java>

¹⁰ Android Exchange strings.xml [Computer Program]. Google, Inc. Web May, 5, 2016. <<https://android.googlesource.com/platform/packages/apps/Email/+/178e51fcd81e0ec1abd3a0990620623099d5b4f3/res/values-el/strings.xml>>

¹¹ Android Exchange patent_disclaimer.txt [Computer Program]. Google, Inc. Web May, 5, 2016. <https://android.googlesource.com/platform/packages/apps/Exchange/+/android-4.4_r1/src/com/android/exchange/patent_disclaimer.txt>

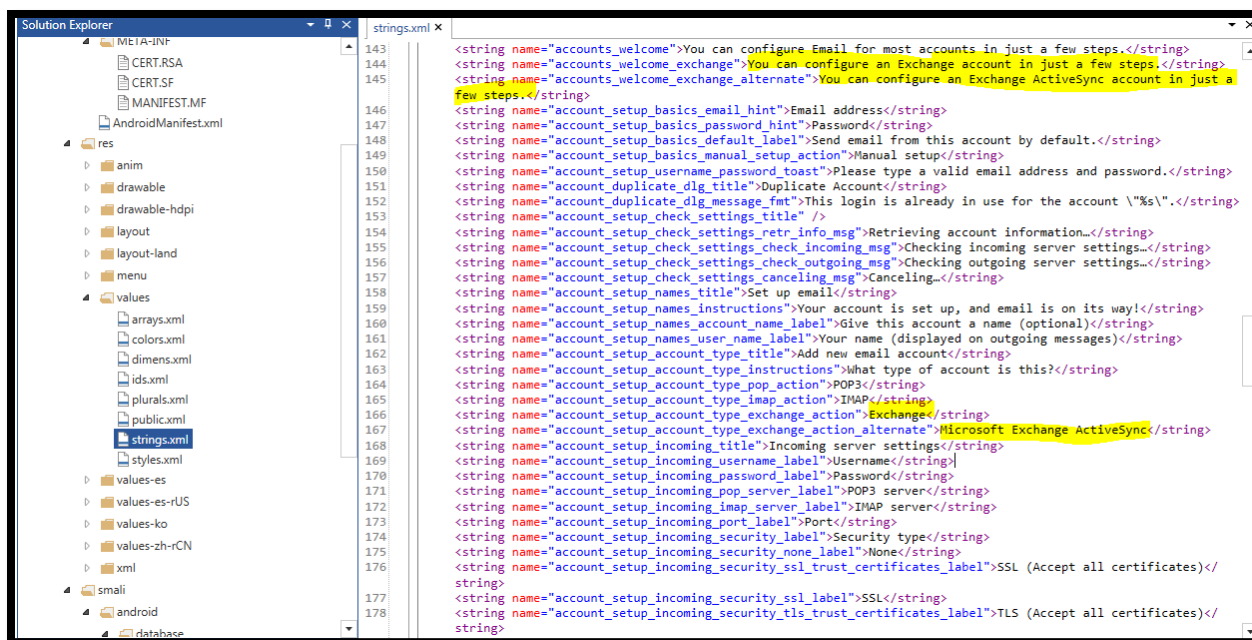


Figure 6. Text stored in Exchange ActiveSync implementation within CP_Email.apk (highlighting added)

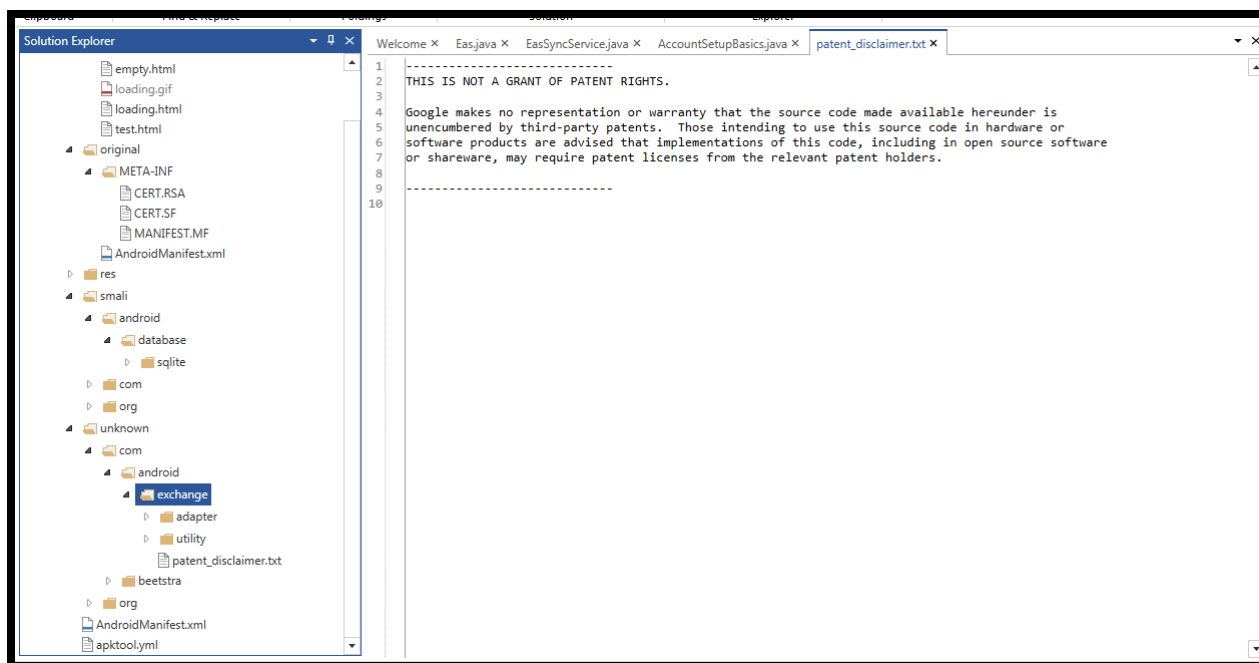


Figure 7. Patent Disclaimer found within CP_Email.apk

V. Conclusion

12. Implementations of Exchange ActiveSync are typical in Android devices and easily detectable. Exchange ActiveSync implementations are found within the Android operating system source code. Implementations of Exchange ActiveSync can also be

detected in the standard account settings of Android devices, including Yulong devices such as the Coolpad Quattro. The software packages that include the corresponding implementations of Exchange ActiveSync can also be located within the filesystem of Android devices, again including Yulong devices such as the Coolpad Quattro.

13. I understand that additional materials may be produced. I therefore reserve the right to supplement or amend my opinion, as expressed in this Declaration, following the production of additional materials and further analysis of the current or additional materials.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on May 6, 2016 in Mountain View, CA.

A handwritten signature in black ink, appearing to read 'Nikolaus Baer', is written over a horizontal line.

Nikolaus Baer

Appendix A: Resume of Nikolaus Baer

EXPERIENCE**Baer Consulting**, Mountain View, CA

JUN 2012 - Present

Principal

Intellectual Property Technical Advisor

- Testifying expert witness and technical analyst and for software intellectual property (IP) litigations including patents, trade secrets, and copyright matters
- Patent evidence of use, prior art, invalidity, and non-infringement analysis
- Software source code analysis for active litigation and pre-litigation matters
- Reverse engineering and testing of software on mobile, desktop, and server platforms
- Patent prosecution
- Software design and development

Zeidman Consulting, Cupertino, CA

FEB 2008 - JUN 2012

Project Manager

MAR 2010 - JUN 2012

Research Engineer

FEB 2008 - MAR 2010

- Managed software development and analysis projects
- Over 20 software intellectual property (IP) litigations
 - Managed software IP analysis and composed expert reports regarding patents, trade secrets, and copyright matters
 - Composed claim charts for patent invalidity, infringement, and non-infringement
 - Scoured academic papers, books, articles, and software manuals, as well as installed software over 20 years old on even older computers to find prior art
 - Testified in deposition for software IP litigation
- Increased security of our client's valuable materials by developing an internal asset tracking web application
- Created a customer relationship management tool that exponentially increased the number of potential customers contacted
- Independently developed a report automation tool that became an integral part of the company workflow and a key selling point of the consulting services
- Developed source code comparison relational filtering and analysis tool
- Authored seven published papers and articles based upon detailed research in several aspects of software comparison technologies

Theranos, Inc., Palo Alto, CA

AUG 2006 - FEB 2008

Firmware Developer

- Lead developer of device control system that provided a static interface and API to users while concurrently allowing interchangeability of multiple communication and device drivers to match actual hardware
- Designed and built multi-threaded system initialization, movement control, and communications
- Performed product development, including prototype design, implementation, and testing in pre-clinical settings on a multiprocessor system with Java J2ME in the communication environment and real-time C in the device control environment
- Responsible for development and documentation of use cases, test cases, system requirements, class models, safety, and critical systems analysis

Zeidman Technologies, San Jose, CA

MAR 2006 - AUG 2006

Software Developer

- Developed multifaceted GUI in VB for Ethernet networking emulation software
- Upgraded complex multi-threaded DLL in VC++
- Designed and built large data post-processing methodology
- Researched and developed data-passing algorithms between multi-threaded VC++ and VB applications

Nascent Systems Technology, Monterey, CA

JAN 2005 - MAR 2006

Software Developer

- Ported large software application onto small mobile devices using VC++, eVC++ and Windows API with RS232, Bluetooth, Wi-Fi, and USB communication
- Managed and recruited software consultants to reduce development time and increase profit
- Built and maintained marketing website using HTML and JavaScript with Flash Demo
- Wrote and published complex applications' demonstrations and tutorials
- Developed search solution in Java for making extensive documentation user-friendly which reduced a month long documentation job to a few hours

Vareda Engineering, Santa Barbara, CA

APR 2003 - JAN 2005

Project Engineer/Programmer

- Designed and built specialized testing and research equipment using Orcad, PADS, LabView, Assembly, Flash, Eagle, C, C++, and Java
- Built embedded circuits and matching custom drivers for PC control and setup
- Engaged directly with customers to customize products to their needs
- Supervised embedded programming of commercial product

Organic Photometrics, Santa Barbara, CA

JUN 2002 - SEP 2002

Product Development Engineer

- Led the development of new commercial testing equipment addressing the unique needs of organic LED developers
- Developed drivers for light spectrum/strength meters and power supply
- Integrated complex hardware sensors with a user-friendly interface

EDUCATION

- B.S. Computer Engineering (Honors), UC Santa Barbara 2004
- Technology Entrepreneurship Certificate, UC Santa Barbara 2004

AWARDS

- First place (\$10,000) Start Cup 2004 Business Plan Competition
- UCSB's Regents Scholarship, Chancellors Award, Honors, Dean's Honors
- Tau Beta Pi: Engineering Honor Society

PAPERS AND PRESENTATIONS

- Baer, N., and Ahuja, J., "Protecting and Tracking Confidential Materials," Intellectual Property Today, May 2012.
- Baer, N. and Zeidman, B., "Measuring Whitespace Pattern Sequences as an Indication of Plagiarism," Journal of Software Engineering and Applications, 2012, April 2012.
- Shay, I., Baer, N., and Zeidman, R., "Measuring Whitespace Patterns in Computer Source Code as an Indication of Plagiarism," Intellectual Property Today, October 2010.
- Shay, I., Baer, N., and Zeidman, R., "Measuring Whitespace Patterns as an Indication of Plagiarism," ADFSL Conference on Digital Forensics, Security and Law, May 20, 2010.
- Baer, N. and Zeidman, B., "Measuring Changes in Software with CLOC," Embedded.com (www.embedded.com), July 28, 2009.
- Baer, N. and Zeidman, B., "Measuring Changes in Software IP," Intellectual Property Today, May 2009.
- Baer, N. and Zeidman, B., "Measuring Software Evolution with Changing Lines of Code," 24th International Conference on Computers and Their Applications (CATA-2009), April 10, 2009.
- Baer, N., Discovering Software Trade Secret Theft, Silicon Valley CodeCamp, 11/2008

- Zeidman, B. and Baer, N., What, Exactly, Is Software Trade Secret Theft? Intellectual Property Today, March 2008.
- Baer, W. and Baer, N., Battlefield Visualization and Database Creation System Using One Meter Terrain, Proceedings of the ITEA Modeling and Simulation Workshop, 12/2005.

PATENTS

- Baer, N. and Baer, W., Interest-Attention Feedback System for Separating Cognitive Awareness into Different Left and Right Sensor Displays, USPTO application number 13/455,134.
- Baer, N., Marini, F., Lodi, A., and Faetani, S., Portable Unit for Determining the Position With Respect to a Reference, Particularly for Substantially Shielded Environments, USPTO application number 11/282,832 and EPO application number 20050110937.

MEMBERSHIP

- Alumni aid officer, past-president, webmaster, and student advisor of the Northern California Scholarship Foundation (NCSF) Alumni Association
- Past Membership Chair of the Belmont Lions
- IEEE, member
- Volunteer with the Lucile Packard Children's Hospital
- Volunteer with the Mid-Peninsula Boys & Girls Club

Appendix B: Litigation Testimony Experience

10/2014 – 1/2016: Cross Mediaworks, LLC and Telamerica Media, LLC v. EMT Holdings, LLC and EMT & S Incorporated

Law Firm: Maxwell & Anderson, LLC

Client: EMT Holdings, LLC

Court: U.S. District Court, Southern District of New York

Case: 14 Civ. 561 (VSB)

Alleged trade secret misappropriation

Testified in deposition

Testified at a hearing

11/2014 - 8/2015: Allure Energy Inc. v. Nest Labs, Inc. et al

Law Firm: White and Case LLP

Client: Nest Labs, Inc.

Court: U.S. District Court, Eastern District of Texas

Case: 9:13-CV-102

Alleged patent infringement

Provided expert report

Testified in deposition

1/2014 - 3/2015: Trebro Manufacturing v. Firefly Equipment et al

Law Firm: Antoinette M. Tease, P.L.L.C.

Client: Trebro Manufacturing

Court: U.S. District Court, Montana District Court, Billings Division

Case: CV -13-36-BLG-SEH

Alleged copyright infringement

Provided expert report

Testified in deposition

12/2013 - Current: InfoSpan Inc et al v. Emirates NBD Bank PJSC

Law Firm: Latham & Watkins

Client: Emirates NBD Bank PJSC

Court: U.S. District Court, California Central District Court

Case: 8:2011cv01062

Alleged copyright infringement and trade secret misappropriation

Provided expert report

Testified in deposition

8/2011-6/2012: Bally Technologies, Inc. v. Business Intelligence Systems Solutions

Law Firm: Morgan, Lewis, Bockius LLP

Client: Business Intelligence Systems Solutions

Court: U.S. District Court, District of Nevada

Case: 2:2010cv00440

Alleged patent infringement

Provided expert report

Testified in deposition

Appendix C: Materials Considered

1. Yulong Coolpad Quattro 4G 5860E purchased through the Amazon marketplace
2. Blank, M (2008-2009) Android Exchange [Computer Program]. Google, Inc. Web May, 5, 2016. <https://android.googlesource.com/platform/packages/apps/Exchange/+master/src/com/android/exchange>
3. "Microsoft Exchange Information Services and Security Policies Supported by Android 2.2 and 2.3." Google, Inc. Web May, 5, 2016. <http://static.googleusercontent.com/media/www.google.com/en//help/hc/pdfs/mobile/ExchangeAndAndroid2.2and2.3-003.pdf>
4. "Setting up an Android Based Phone with ActiveSync." The University of Queensland. Web May, 5, 2016. <https://www.its.uq.edu.au/helpdesk/setting-android-based-phone-activesync>
5. "Android Exchange Active Sync Setup" Protected Trust, LLC. Web May, 5, 2016. <https://protectedtrust.com/knowledgebase/android-exchange-active-sync-setup/>
6. "Google Android 2.3.7 Simplified operating system datasheet" PDADB.net. Web. 05 May 2016. http://pdadb.net/index.php?m=os&id=a237&c=google_android_2.3.7
7. File Explorer from NextApp, Inc. Web May, 5, 2016. <https://play.google.com/store/apps/details?id=nextapp.fx&hl=en>
8. Virtuous Ten Studio (VTS). Web May, 4, 2016. <http://virtuous-ten-studio.com/>
9. Blank, M (2008-2009) Android Exchange EAS.java [Computer Program]. Google, Inc. Web May, 5, 2016. https://android.googlesource.com/platform/packages/apps/Exchange+/android-4.4_r1/src/com/android/exchange/Eas.java
10. Android Exchange strings.xml [Computer Program]. Google, Inc. Web May, 5, 2016. <https://android.googlesource.com/platform/packages/apps/Email+/178e51fcd81e0ec1abd3a0990620623099d5b4f3/res/values-el/strings.xml>
11. Android Exchange patent_disclaimer.txt [Computer Program]. Google, Inc. Web May, 5, 2016. https://android.googlesource.com/platform/packages/apps/Exchange+/android-4.4_r1/src/com/android/exchange/patent_disclaimer.txt